

**California Department of Fish and Game**  
**Substantive Provisions - Draft 2112 ITP Guidelines for Timber Operations**  
**July 12, 2006 DRAFT**

**787.1. Definitions.**

(a) The terms used in this article are defined by the definitions provided in the Forest Practice Rules, California Code of Regulations, title 14, section 895.1, et ., except as specifically provided in this article:

(1) Even-aged Management. "Even-aged management" includes only silvicultural methods in the Forest Practice Rules, California Code of Regulations, title 14, sections 913.1, 933.1, and 953.1.

(2) Functional Filter Strip. A "functional filter strip" is a structure or vegetation that is effective in preventing concentration, transport, and delivery of sediment to streams and lakes. A functional filter strip promotes sediment deposition from runoff by reducing velocity and filtering water through features such as gradual slopes treated with vegetation, gentle slopes, woody debris and mulch or settling basins.

(3) Headwall Swale. A "headwall swale" is a concave depression, with convergent slopes typically of 65 percent or greater, that is connected to waters via a continuous linear depression. A linear depression interrupted by a landslide deposit is considered to be continuous for purposes of this article.

(4) Hydraulic Capacity. "Hydraulic capacity" pertains to inboard ditches. It is the ability to contain flow from a runoff event without overflowing to the road surface or substantially downcutting the inboard ditch.

(5) Hydrologic Disconnection. "Hydrologic disconnection" is the removal of direct routes of drainage or overland flow of road runoff to Class I, II, and III waters by directing drainage or overland flow onto stable portions of the forest floor to dissipate energy, facilitate percolation, and resist or prevent channelization.

(6) Inner Gorge. An "inner gorge" is a geomorphic feature formed by coalescing scars originating from landsliding and erosional processes caused by active stream erosion that begins immediately adjacent to the stream channel below the first break in slope.

(7) Intermittent Watercourse. An "intermittent watercourse" is a watercourse wherein flow is not present in all seasons of an average rainfall year.

(8) Perennial Watercourse. A "perennial watercourse" is a watercourse wherein flow is present in all seasons of an average rainfall year

(9) Road Decommissioning. "Road decommissioning" is the temporary or permanent abandonment of a road prism and associated landings resulting in

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maintenance-free drainage and erosion control. This includes complete removal of stream crossing structures and fills, removal of unstable road and landing fills, hydrologic disconnection of the road prism, and application of measures to prevent and control erosion, which result in maintenance-free drainage and erosion control.

(10) Road Maintenance. "Road maintenance" is an activity or activities to maintain and repair roads, involving minor manipulation of the road prism, as opposed to major manipulation or road reconstruction, to produce a safe, stable, and firm road surface and to ensure road drainage facilities, structures, cutbanks and fillslopes are kept in a condition to protect the road and minimize erosion that could lead to sediment discharge into waters. Examples of road maintenance include shaping and/or rocking a road surface; installation and maintenance of rolling and critical dips; restoring functional capacity of inboard ditches, cross drains, or culverts; and repairing water bars.

(11) Road Prism. A "road prism" is all parts of a road including cut banks, ditches, road shoulders, road surfaces, and fill slopes.

(12) Scour. "Scour" is an erosive action of running water that excavates and carries material from the bed or bank of a roadside ditch, river, or stream. Scour may occur in both earth and rock material.

(13) Side Slope and Side Slope Class. "Side slope" pertains to the hillslope immediately adjacent to a watercourse. measurement by percentage of the side slope of a watercourse. "Side slope class" pertains to steepness of the hillslope, categorized into one of three classes: <30%, 30%-50%, >50%). Side slope is measured from the watercourse transition line, to a point 100 feet upslope. Where slope configurations are variable, a weighted average method shall be used to determine side slope.

(14) Waters. "Waters" for purposes of this article includes watercourses, seeps, springs, lakes, ponds, and wetlands.

(15) Watersheds with listed anadromous salmonids . Means a hydrologic sub-area where historic or current runs of State or Federally listed anadromous salmonids have been documented or where habitat is restorable.

#### **787.7 Minimization and Mitigation Measures for Timber Operations**

(a) The following are minimization and mitigation measures for timber operations in planning watersheds with listed anadromous salmonids:

(1) The minimum Watercourse and Lake Protection Zone (WLPZ) width for Class I waters shall be 150 feet from the watercourse or lake transition line.

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(2) Within a WLPZ for Class I waters, at least 85% of overstory canopy shall be retained with 75 feet of the watercourse or lake transition line, and at least 65% overstory canopy within the remainder of the WLPZ. The overstory canopy must be composed of at least 25% overstory conifer canopy post-harvest. Harvesting of hardwoods shall only occur for the purpose of enabling conifer regeneration.

(3) Where an inner gorge extends beyond a Class I WLPZ and slopes are greater than 55%, a special management zone shall be established where the use of evenaged regeneration methods is prohibited. This zone shall extend upslope to the first major break-in-slope to less than 55% for a distance of 100 feet or more, or 300 feet as measured from the watercourse or lake transition line, whichever is less. All operations on slopes exceeding 65% within an inner gorge of a Class I or II watercourse shall be reviewed by a Registered Geologist prior to plan approval, regardless of whether they are proposed within or outside of a WLPZ.

(4) No timber operations are allowed in a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection, under emergency notices or exemption notices, except for hauling on existing roads, road maintenance, operations conducted for public safety, construction or reconstruction of approved watercourse crossings, temporary crossings of dry Class III watercourses which do not require a "Lake or Streambed Alteration Agreement" under the Fish and Game Code or forest conditions requiring harvesting that is approved by a letter of concurrence from the Department.

(5) No salvage logging is allowed in a WLPZ.

(6) For Class I watercourses, retain the ten largest conifers within 100 feet of the watercourse or lake transition line on each side of the watercourse, along each 330 foot segment of the watercourse;

(7) For Class I watercourses, within the WLPZ retain trees that provide direct shading to pools. Such trees may also be used to meet other requirements for tree and canopy retention

(8) For Class II watercourses, where an inner gorge is present, establish a special management zone beyond the WLPZ where the use of even-aged regeneration methods is prohibited. This special management zone shall extend upslope to the first major break in slope (i.e., where the slope is less than 55% for a distance of 100 feet or more) or 200 feet as measured from the watercourse or lake transition line, whichever is less. A Registered Geologist shall be

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consulted and any recommendations for slope stability by the geologist shall be implemented;

(9) On all intermittent or perennial Class II watercourses which are mapped on current 1:24,000 scale U.S. Geological Survey topographic map and are tributary to Class I watercourses with listed anadromous salmonids in the planning watershed where timber operations are proposed or the planning watershed immediately downstream.

(A) Inner Band: From 0-50 feet: Retain a minimum of 85% post-harvest overstory canopy. The overstory canopy must be composed of at least 25% overstory conifer canopy post-harvest.

(B) Outer Band with 0-30% Slope: From 50-75 feet retain a minimum of 65% post-harvest overstory canopy. . The overstory canopy must be composed of at least 25% overstory conifer canopy post-harvest.

(C) Outer Band with 31-50% Slope: From 50-100 feet, retain a minimum of 65% post harvest overstory canopy. The overstory canopy must be composed of at least 25% overstory conifer canopy post-harvest.

(D) Outer Band with >50% Slope: From 50-125 feet, retain a minimum of 65% post-harvest overstory canopy. WLPZ width may be reduced to 100 feet for cable yarding operations. The overstory canopy must be composed of at least 25% overstory conifer canopy post-harvest.

(10) On all intermittent or perennial Class II watercourses which are not mapped on current 1:24,000 scale U.S. Geological Survey topographic map and are tributary to Class I watercourses with listed anadromous salmonids the requirements of the Forest Practice Rules in existence at the time of the activity will apply.

(11) For Class III watercourses in or adjacent to harvest units where even-aged management, rehabilitation of under-stocked stands or variable retention prescriptions are proposed: 1) establish a minimum 25-foot-wide ELZ on each side of the watercourse for slopes less than or equal to 30% and a minimum 50-foot-wide ELZ on each side of the watercourse for slopes greater than 30%; 2) retain all trees situated within the "channel zone" (as defined in California Code

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of Regulations, title 14, section 895.1) and trees that have boles that overlap the edge of the channel zone; 3) within the ELZ, at least 50% of the understory vegetation shall be left post-harvest in an evenly distributed condition; 4) within the ELZ, retain all snags, LWD and regeneration conifers (10 inches dbh or less), except where necessary to allow for cable yarding corridors, safety, or crossing construction; 5) within the ELZ, prohibit initiation of burning for purposes of site preparation; 6) allow commercial timber operations to "yard through" a Class III ELZ; and 7) tractor yarding, except for feller buncher and shovel yarding, is prohibited; and 8) retain 15 square feet basal area of hardwoods/acre where they are present before harvest, including the largest hardwoods available for this purpose. Retain all hardwoods when less than 15 square feet basal area is present before harvest.

(12) Where a headwall swale is present: 1) utilize only single-tree selection prescriptions as per California Code of Regulations, title 14, section 913.2(a) (2) (A) that retain the diameter distribution present before timber operations or a "thinning from below" prescription as per California Code of Regulations, title 14, section 913.3(a) (2004) that retains dominant and codominant trees; and 2) require review of timber operations by a Registered Geologist;

(13) For construction, reconstruction, upgrades, maintenance, and operation of roads within and appurtenant to THPs, the following apply:

(A) An assessment of road surface and drainage conditions for all road segments appurtenant to proposed operations will be included in the THP or NTMP. The assessment will contain a list of site-specific, field inventory information including proposed treatment of existing or potential sediment sources for all crossings, ditch relief culverts, road surfaces, road cuts, road fills, landings, turnouts and inboard ditches. Field inventory information will be obtained by a qualified observer while traversing the road segments.

(B) The assessment shall be subject to review and approval by the Department. The Department may require additional field inventory, work sites, and/or alternative treatments.

(C) The results of the road assessment will be used to, construct, reconstruct, or decommission road segments prior to filing the work completion report for a THP or NTMP. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.

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(D) The following design features will be included in the maintenance, construction, reconstruction, or decommissioning of roads, except where site-specific alternatives are explained, justified, and approved by the Department. The Department may only approve alternatives where the consequences for aquatic habitat are no greater than would result from the standard measures. Except for maintenance needs that arise from October 15 to June 1, all work described below shall be completed before October 15 in the year that work begins.

(i) Road surfaces will be outsloped with rolling dips, wherever feasible.

(ii) Water crossings and associated fills and approaches will be constructed and maintained to prevent diversion of flow down the road and to minimize erosion should the drainage structure become obstructed.

(iii) All road segments will be hydrologically disconnected, to the extent feasible, from waters by site specific application of the following: outsloping, rocking, installation of rolling dips, cross drains, and/or waterbars. All of these features will drain to stable and functional filter strips.

(iv) Crossings and associated fills will be removed where there is evidence of failure potential or sediment delivery to Class I, II, or III waters.

(v) Culverts will be replaced or removed if they are crushed, perforated, piping, separated, under-sized, located in unstable fill, or causing erosion that may be expected to deliver sediment to Class I, II, or III waters. Replaced culverts will be installed at or as close to the original stream grade and slope as feasible.

(vi) The segment of road running surface and ditches of road approaches to watercourse crossings shall be treated and maintained between the nearest drainage facilities on either side of the crossing, per a-e below. Bare soil on associated fill slopes, shoulders and cuts shall be treated with seed and mulch.

a) Road surfaces on the following shall be treated with high-quality durable, graded and screened rock (minimum compacted 6-inch depth) or paving:

- 1) permanent roads
- 2) seasonal roads crossing Class I watercourses
- 3) roads used for hauling (logs, rock, heavy equipment) from October 15 to June 1

b) Road surfaces on the following shall be treated with seed and straw mulch, or seed, straw mulch and slash:

- 1) all seasonal roads used for hauling in the current year
- 2) all seasonal roads used from October 15 to June 1 for purposes

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other than hauling

- c) Approaches to temporary crossings shall be rocked as needed after crossing removal to avoid rutting or pumping fines during use by light vehicles
  - d) Ditches exhibiting downcutting along 1) permanent roads, 2) seasonal roads crossing Class I watercourses, and 3) roads used for hauling from October 15 to June 1 shall be lined with high-quality, durable rock.
  - e) Ditches along 1) seasonal roads used for hauling in the current year and 2) seasonal roads used from October 15 to June 1 for purposes other than hauling shall be treated with straw mulch.
- (vii) Sediment discharge from unstable or eroding cutbanks, fillslopes and landing fills will be prevented by pulling, buttressing, or other means and by installing and maintaining effective erosion control materials.
- (viii) Deteriorating bridges (including associated fill, rip rap, and abutments) and bridge approaches showing evidence of failure potential or sediment delivery to Class I, II, or III waters will be repaired, replaced, or removed.
- (E) Erosion control materials shall be applied in sufficient quantity prior to the onset of measurable precipitation with re-application as needed to avoid any visible increase in turbidity in Class I, II or III receiving waters.
- (F) The guidelines and performance standards for road decommissioning methods described in the current edition of The California Salmonid Stream Habitat Restoration Manual, (published by State of California, Resources Agency, California Department of Fish and Game) will be followed.
- (G) Within WLPZs, any new road or landing construction, reconstruction, new stream crossings, use of Class I fords or opening of old roads (except for the purpose of decommissioning) will be subject to approval by the Department. The Department will only approve new road or landing construction, reconstruction, new stream crossings, or opening of old roads within the WLPZs where protection for aquatic habitat provided by proposed practices is at least equal to the protection provided by the use of alternate routes or locations outside of the WLPZ.
- (H) Prior to use for hauling, all roads in Class 1 WLPZs shall be surfaced with high quality, durable, graded and screened rock surfacing (minimum compacted 6 inch depth) or paving, and the road surface shall be maintained to avoid rutting or pumping fines during use.

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(I) No road or landing construction, reconstruction, or decommissioning will be undertaken from October 15<sup>th</sup> to June 1<sup>st</sup>, or at any time outside this period when saturated soil conditions exist, unless explained, justified, and approved by the Department. The Department will only approve exceptions where the protection provided for aquatic habitat by the proposed practices is at least equal to the protection provided by the above time period or conditions. Access without specific Department approval is allowed to correct emergency, road-related problems demanding immediate action (as defined in Public Resources Code section 21060.3).

(J) Use of unpaved roads will cease when precipitation is sufficient to generate overland flow off the road surface or use of any portion of the road results in rutting of the road surface.

(K) Resumption of road use, road or landing construction, road reconstruction, or decommissioning will not occur until the road is dry. A dry road has a well-drained surface and use of the road does not cause rutting or pumping of fines or a visible turbidity increase in any drainage facility or road surface that drains into Class I, II, or III waters.

(L) All roads appurtenant to THPs and NTMPs will be inspected at least twice annually – once between June 1<sup>st</sup> and October 15<sup>th</sup> and at least once after October 15<sup>th</sup> following the first storm event producing bankfull stage. The inspection will be started as soon as conditions permit access (in accordance with Section 787.7(a) (13)(K) of this article) to ensure that drainage structures and facilities are functioning to hydrologically disconnect the road prism from waters. Inspection results and follow up corrective measures will be documented. These records will be maintained and available upon request.

(M) Decommissioned roads will be inspected following the first storm event producing bankfull stage after decommissioning and, again, prior to filing the completion report. The purpose of the inspection will be to verify the effectiveness of treatments in preventing sediment discharges to waters and to ensure treatments are functioning to restore natural drainage and hillslope stability. If treatments are found to be ineffective, further treatments will be applied if the volume of sediment prevented from entering a channel by additional treatments is greater than that incurred by re-entering the site.

(N) During road inspection and maintenance, measures will be employed to ensure the following: waterbars fully capture run-off from road surfaces and discharge it without gully formation or sediment delivery to waters; culverts (including crossdrains) are not occluded by debris; inboard ditches are not downcutting or scouring; cutbank erosion is minimized, and the fine sediment present on road surfaces is prevented from delivery to Class I, II, or III waters.



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(O) Routine corrective work that prevents diversion of water from a watercourse or ditch or helps maintain a stable road or landing surface (e.g., repairing inboard ditches, cross drains, water bars, road surface and fill, unblocking of culverts) will be performed as soon as stable operating surfaces are present, regardless of the time of year. Other maintenance needs of lower priority will be undertaken between June 1<sup>st</sup> and October 15<sup>th</sup>.

(P) Forest floor discharge sites below the outlets of drainage facilities on all roads appurtenant to THPs and NTMPs shall be inspected for evidence of sediment delivery to Class I, II, or III waters at least twice annually; once between June 1 and October 15, and at least once after October 15 following the first storm event producing bankfull stage discharges prior to filing the notice of completion report. If evidence of sediment delivery is present, additional cross drains, waterbars, or rolling dips will be installed to reduce the discharge volume to the site.

(Q) Grading of road surfaces will occur only when necessary to achieve a uniform, stable, and well-drained operating surface. Inboard ditches will be graded only when they are blocked or lack adequate hydraulic capacity, or driver safety is a concern. Where feasible, blading the segment of ditch between the watercourse and first drainage facility will be avoided.

